

1 **WHAT IS CLAIMED IS:**

2 1. A wellbore fluid comprising an oleaginous phase and an additive for increasing  
3 the density of the wellbore fluid, wherein the additive comprises solid colloidal particles  
4 coated with a dispersant.

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6 2. The wellbore fluid of claim 1, wherein the colloidal particles are composed of a  
7 material of specific gravity of at least 2.68.

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9 3. The wellbore fluid of claim 1, wherein the colloidal particles have a  $D_{50}$  of less  
10 than 2.0  $\mu\text{m}$  diameter.

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12 4. The wellbore fluid of claim 1, wherein the composition of the colloidal particles is  
13 selected from the group consisting of barite, calcium carbonate, dolomite, ilmenite,  
14 hematite or other iron ores, olivine, siderite, strontium sulfate and mixtures thereof.

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16 5. The wellbore fluid of claim 1 wherein the dispersant is selected from carboxylic  
17 acids of molecular weight of at least 150.

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19 6. The wellbore fluid of claim 5 wherein the dispersant is selected from the group  
20 consisting of: oleic acid, polybasic fatty acids, alkylbenzene sulfonic acids, alkane  
21 sulfonic acids, linear alpha-olefin sulfonic acid or the alkaline earth metal salts of any of  
22 the above acids, and phospholipids and mixtures thereof.

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24 7. The wellbore fluid of claim 1 wherein the dispersant is a polymeric acrylate ester.

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26 8. The wellbore fluid of claim 7 wherein the polymeric acrylate ester is made from  
27 the monomers stearyl methacrylate, butylacrylate and acrylic acid.

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29 9. The wellbore fluid of claim 7 wherein the polymeric acrylate ester has an average  
30 molecular weight between about 10,000 Daltons and 200,000 Daltons.

1 10. The wellbore fluid of claim 7 wherein the polymeric acrylate ester has an average  
2 molecular weight between about 17,000 Daltons and 30,000 Daltons.

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4 11. A method of making an additive for increasing the density of a fluid, the method  
5 comprising:

6 comminuting a solid material and a dispersant in a liquid medium, so as to produce solid  
7 colloidal particles coated with the dispersant.

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9 12. The method of claim 11 wherein the liquid medium is an oleaginous fluid.

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11 13. The method of claim 11 wherein the liquid medium is an oleaginous liquid of  
12 kinematic viscosity less than 10 centistokes (10 mm<sup>2</sup>/s) at 40° C and of flash point of  
13 greater than 60 °C.

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15 14. The method of claim 12 wherein the oleaginous fluid selected from the group  
16 consisting of diesel oil, mineral or white oils, n-alkanes or synthetic oils such as alpha-  
17 olefin oils, ester oils or poly(alpha-olefins).

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19 15. The method of claim 12 wherein the dispersant is selected from carboxylic acids  
20 of molecular weight of at least 150.

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22 16. The method of claim 12 wherein the dispersant is selected among oleic acid,  
23 polybasic fatty acids, alkylbenzene sulfonic acids, alkane sulfonic acids, linear alpha-  
24 olefin sulfonic acid or the alkaline earth metal salts of any of the above acids, and  
25 phospholipids.

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27 17. The method of claim 12 wherein the dispersant is a polymeric acrylate ester.

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29 18. The method of claim 17 wherein the polymeric acrylate ester is made from the  
30 monomers stearyl methacrylate, butylacrylate and acrylic acid.

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2 19. The method of claim 17 wherein the polymeric acrylate ester has an average  
3 molecular weight between about 10,000 Daltons and 200,000 Daltons.

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5 20. The method of claim 17 wherein the polymeric acrylate ester has an average  
6 molecular weight between about 17,000 Daltons and 30,000 Daltons.

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8 21. The method of claim 11 wherein the comminuting of a solid material and a  
9 dispersant in a liquid medium is carried out in an agitated fluidized bed of a particulate  
10 grinding material.

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12 22. The method of claim 11 wherein the solid material is selected from the group  
13 consisting of barite, calcium carbonate, dolomite, ilmenite, hematite or other iron ores,  
14 olivine, siderite, strontium sulfate and mixtures thereof.

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